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GB 1476848
GB 1471866
GB 1292712
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(71) Applicants
J.P.M. (Automatic Machines) Limited, Hadfield Road, Leckwith Trading Estate, Cardiff, Glamorgan, Wales
(72) Inventor
Alan Geoffrey Parker
(74) Agents
Wynne-Jones, Lainé & James

(54) Improvements relating to coin-operated gaming or amusement machines

(57) A "fruit" machine has drums or reels (1, 2, 3) which can be "nudged" i.e., indexed one or more symbol spaces, in the hope of bringing up a winning combination. The proposed feature allows reverse nudging as an alternative to forward nudging, i.e., where the drum moves in the same direction as it is spun. The feature may be available at various points in the game, not necessarily after the drums have spun, and may constitute a complete game. The reverse movement is obtainable by a reversible motor (8) or by means separate from the drum spinning motor, such as solenoids (17) or an extra motor (20) and suitable clutches (22).

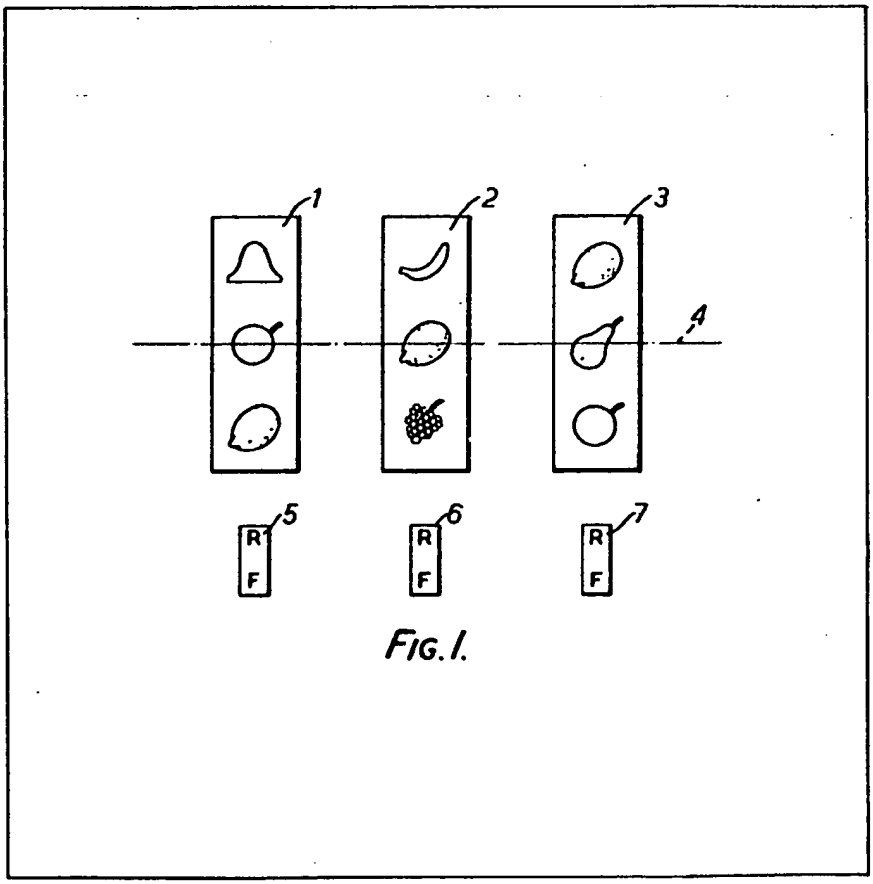

FIG. 1.

The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy.

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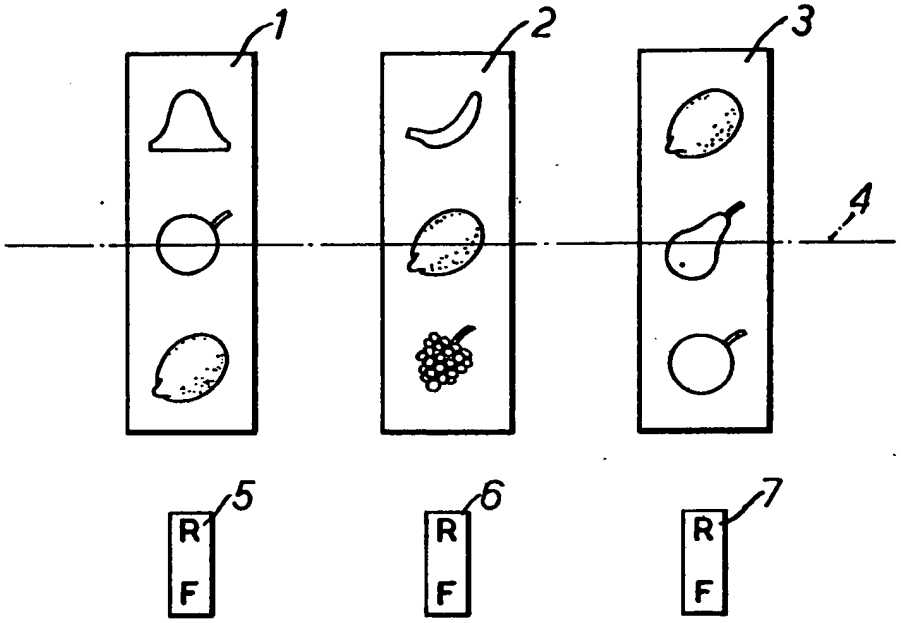

FIG. 1.

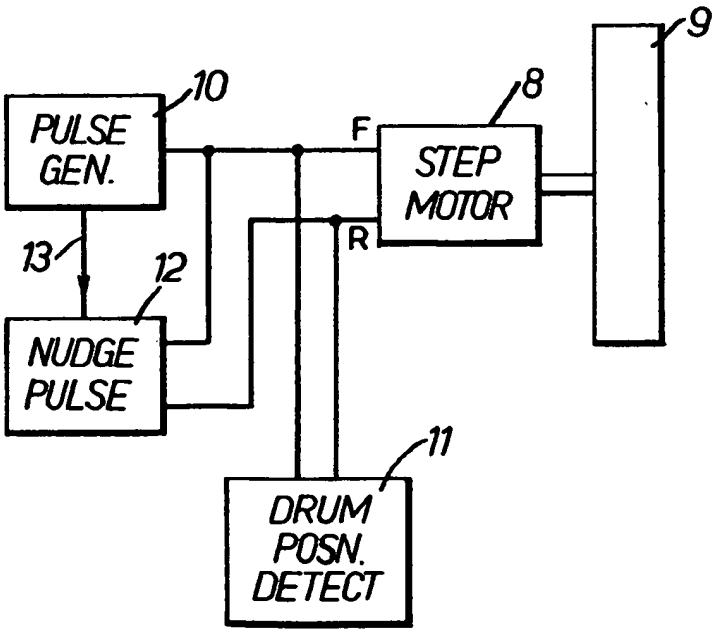

FIG. 2.

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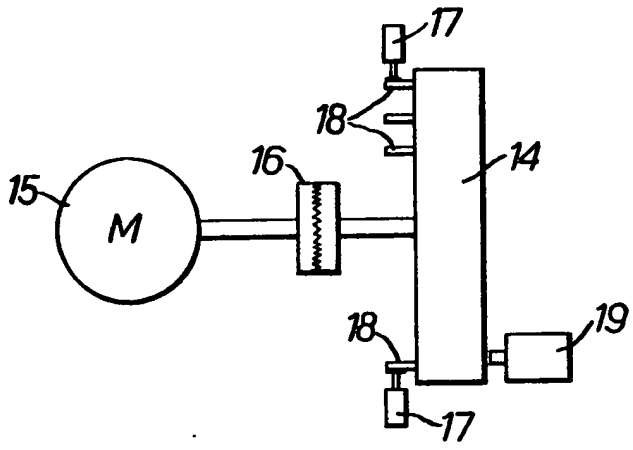

FIG. 3.

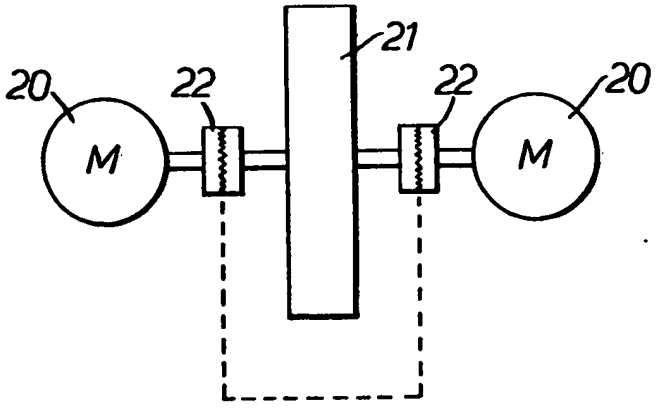

FIG. 4.

SPECIFICATION

Improvements relating to coin operated gaming or amusement machines

This invention relates to coin-operated or coin-freed gaming machines or amusement-with-prizes machines of the kind in which a series of symbols are displayed to view when the machine is operated and then stops, and if a line of these symbols shows a winning combination on a combination line, a pay-out mechanism is rendered operable or a prize is awarded and indicated.

The invention will be described as applied to a machine of this kind (generally known as fruit machines) in which the symbols are displayed on rotary drums, reels or discs, but it will be understood that it can also be applied to machines of this kind in which symbols are displayed on a display device on which individual symbols can be illuminated or otherwise distinguished to constitute the equivalent of the combination line.

It has already been proposed that, to add interest to such a machine, it should incorporate a "nudge" feature. This is described, for example, in British Patent No. 1292712. This involves providing a button or other mechanism associated with each drum which, if the feature is made available, can be operated when the drum has stopped spinning to move the drum on one symbol space to produce a different combination line. Thus if the drums have stopped with one symbol missing from a winning combination, and that symbol is visible in the next space of the appropriate drum, the operation of the nudge button of that drum brings the symbol into line and produces a win.

It is the aim of this invention to provide more variety in the "nudge" feature.

According to the present invention there is provided a coin-operated or coin-freed gaming or amusement-with-prizes machine of the kind hereinbefore defined wherein at least one drum when stationary, or its equivalent, displays at least three symbols and this or each such drum or its equivalent has associated therewith, to provide an adjustment feature, an adjustment button or mechanism by means of which the respective drum or its equivalent, whenever it is stationary and the feature is enabled, can be indexed at least in the direction opposite to that in which the series of symbols move during non-feature play, to display on the combination line another symbol which was previously visible to the player but not on the combination line and which thereby completes or contributes to a winning combination.

For a better understanding of the invention some embodiments will now be described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 is a diagram representing the display windows on a fruit machine, showing associated "nudge" buttons,

Figure 2 is a diagram illustrating a reel drive system with a "nudge" feature,

Figure 3 is a diagram illustrating another reel drive system with a "nudge" feature, and

Figure 4 is a diagram illustrating a further reel drive system.

There are three windows 1, 2, 3 in the display of Figure 1, which illustrates the situation where a winning combination line of three similar fruits is missed by the left-hand drum 1 having rotated one symbol space too far and the right-hand drum 3 having stopped one symbol space short, the drum rotation causing the symbols to move downwards as viewed through the windows. The combination line that determines a win is the middle one 4, while the symbols in the adjacent lines are necessarily visible to allow the player to assess how to "nudge." If the "nudge" feature is available, which either may be at any time when the drums are not actually rotating or as determined by a random selector unit, then a left-hand button 5 may be actuated to reverse its drum one space and the right-hand button 7 to bring its drum to one space. Each button 5, 6 and 7 is in the form of a rocker which when pressed at the upper end marked 'R' reverses the drum, and when pressed at the lower end moves the drum forward. They are biased to the neutral position. Alternatively, two separate buttons may be provided.

It is emphasised that this feature may be available not only after the drums have stopped rotating but immediately upon entry of a token or coin to enable the machine for a play. Provision may be made for cancelling the availability of the feature after one "nudge" from any one drum, after one nudge from each of the drums, or after a specified larger number of nudges on one or all of the drums. If more than one nudge is allowed on any one button, means may be provided for preventing a player nudging forwards and then backwards or vice-versa on any of the drums. If the nudge feature is employed before the drums spin, that may complete the game, i.e., the drums will not spin at all. However, it is possible to provide for spinning after "nudging," and even further nudging after that, to offer the chance of more than one prize for one play.

In another version there may be a separate selection feature whereby the player can choose whether to nudge forwards or backwards. The control for this may, for example, be two further buttons marked respectively "Forwards" and "Reverse" and whichever one is pressed when the nudge feature is available determines the "nudge" direction for all the drums for the rest of that play. The nudge buttons themselves need not then be doubled for each drum, or be in the form of rockers.

Referring to Figure 2, this feature may readily be applied to a reel drive system employing a stepping motor 8. Such a system is described in our co-pending Application No. 25287/78.

Here, the reel 9 steps forward as dictated by the stepping motor 8, each step, or each integral

number of st ps, corresponding to the indexing of one symbol space forward. The stepping motor is of course capable of reverse movement and is governed by a pulse generator 10, the pulses corresponding to the steps. The position of the drum, and hence the symbol displayed, can be derived from the pulses rather than from the reel itself, and this is indicated by unit 11. However, other methods (and there are several well known ones) can be used.

The "nudge" feature simply entails providing means 12 which generate pulses upon actuation of the "nudge" button, and these are applied to the forward and reverse input as determined by which, or the manner in which, the button is pressed. In order not to disturb the operation of the stepping motor 8 while it is rotating the drum during a normal spin, the "nudge" pulse circuit 12 will be disabled through line 13 while the pulses are being supplied from the generator 10. When nudging, the pulses from circuit 12 are also applied to a shift register or other means in unit 11, by which the drum position is determined, and so account is immediately and automatically taken of every nudge movement.

There is not much point in having the option of spinning the drums randomly in reverse rather than forwards, but this could be done by making provision for the pulses from generator 10 to be switched to the reverse input of the stepping motor, either at the choice of the player or randomly selected before the play.

Figure 3 shows a more conventional arrangement where the drum 14 is driven by a motor 15 through a clutch 16. The nudging is provided by two indexing solenoids 17 which are selectively operable when the clutch is disengaged, one being for forward and the other for reverse nudging. They co-operate with an annular array of projections 18 from the side of the drum. The detection of the drum position is here carried out by an independent reading head 19.

An alternative to Figure 3 is to have two motors 20 driving in opposite directions, as shown in Figure 4, being connected to drum 21 through clutches 22 which are coupled so that only one can engage at a time. One of the motors provides the ordinary drum spin as well as forward nudging; the other normally provides just reverse nudging.

Although it is generally intended that nudging should be possible in either direction, within limitations, a machine where nudging is only possible in the reverse direction to the normal spin of the drums is proposed as a simplified version.

CLAIMS

1. A coin-operated or coin-freed gaming or amusement-with-prizes machine of the kind hereinbefore defined wherein at least one drum when stationary, or its equivalent, displays at least three symbols and this or each such drum or its equivalent has associated therewith, to provide an adjustment feature, an adjustment button or mechanism by means of which the respective drum or its equivalent, whenever it is stationary and the feature is enabled, can be indexed at least in the direction opposite to that in which the series of symbols move during non-feature play, to display on the combination line another symbol which was previously visible to the player but not on the combination line and which thereby completes or contributes to a winning combination.

2. A machine as claimed in claim 1, wherein the feature is disabled after a pre-determined number of indexing movements of one or more of the drums or their equivalents.

3. A machine as claimed in claim 1 or 2, wherein the feature, if available, terminates a play of the machine.

4. A machine as claimed in claim 1 or 2, wherein the feature, if available, commences a play of the machine.

5. A machine as claimed in claim 3 or 4, wherein the feature, if available, constitutes a play of the machine.

6. A machine as claimed in any preceding claim, wherein indexing is possible in either direction.

7. A machine as claimed in claim 6, wherein means are provided for preventing indexing in one direction after indexing in the other, and vice versa, during a single play of the machine.

8. A machine as claimed in claim 6 or 7, wherein each drum or its equivalent is individually selectable to be indexed in one or other direction.

9. A machine as claimed in claim 6 or 7, wherein means are provided for collectively selecting whether the drums or their equivalents can be indexed in one or other direction.

10. A machine as claimed in claim 9, wherein the drums or their equivalents are individually indexable subsequent to the selection of direction.

11. A coin-operated or coin-freed gaming or amusement-with-prizes machine substantially as hereinbefore described with reference to the accompanying drawings.

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